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ABSTRACT

Regular educators need to develop skills to work collaboratively with specialists in meeting the special needs of young children in the mainstreamed classroom. These skills include: (1) developing a common knowledge base; (2) using effective interpersonal strategies; (3) using a problem solving approach related to individual and classroom instruction issues; (4) engaging in joint planning; and (5) teaching as a team with complementary roles. A one-year study was conducted to determine the effectiveness of three instructional methods to learn collaboration skills: (1) lecture-discussion; (2) instruction using videotape; and (3) systematic, guided experience in an interdisciplinary practicum. A three-part written test and an experiential assessment were used to measure the effects of the three instructional methods. There were significant statistical differences on two parts of the written test and qualitative differences in the experiential assessment among the three instructional groups. Overall, systematic experience in an inter-disciplinary practicum was most effective on all measures in students' acquisition of collaboration skills. (Author/JD)

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PREPARING EDUCATORS TO COLLABORATE: AN EVALUATION OF THREE APPROACHES

by

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ABSTRACT

Young children with special needs are mainstreamed into many early childhood settings. Because young children profit from having their special needs met throughout the day, it is necessary that regular educators develop skills to work collaboratively with specialists. These collaboration skills include 1) developing common knowledge base, 2) using effective interpersonal strategies, 3) using a problem solving approach related to individual and classroom instruction issues, 4) engaging in joint planning, 5) teaching as a team with complementary roles.

At a small midwestern university, a one-year study was conducted to determine the effectiveness of three instructional methods to learn collaboration skills: 1) lecture-discussion, 2) instruction using videotape, 3) systematic, guided experience in an interdisciplinary practicum.

Two different approaches to the measurement of effects of the three instructional methods were used--one approach was a three-part written test and the other, an experiential assessment. A written test instrument administered to all subjects measured the effects of different instruction on subjects knowledge about and ability to analyze the five collaboration skill areas. The statistical procedure ANOVA (analysis of variance) from the Statistical Package for the Social Sciences was used to determine the significance of the differences in test scores among the three instructional groups.

There were significant statistical differences on Parts A and C on the written test and qualitative differences in the experiential assessment among the three instructional groups. Overall, systematic experience in an interdisciplinary practicum was most effective on all measures in students' acquistion of collaboration skills.

RATIONALE

Nationwide, young children with special needs are often served in settings with specialists, removed from normally developing peers and regular early childhood educators. Yet, several professional collaboration models have appeared in the literature. These models depict mainstreaming and teaming between regular and special educators.

Generic Models

Neel (1981) described three triadic (regular classroom teacher, special educator/consultant, pupil) models where a special educator served as a resource to a regular classroom teacher. In the purchase model, a regular educator "buys" the services of a special educator to provide a short-term removal relief solution. The special educator/consultant provides temporary direct services to identified pupils.

In the doctor-patient model, the regular educator knows that there are difficulties with a pupil. The special educator is called in to provide expert diagnosis of problems and to prescribe a remedy. The flow of expertise is from consultant to teacher.

In the process-consultation model, the special educator as a facilitator supports the regular educator as both of them together identify a problem, analyze the interactions surrounding the problem, and develop procedures to remedy the problem and document progress.

Specific Models

The Vermont Model, a triadic model in which the specialist and regular classroom teacher focus on an eligible student's needs with the regular classroom, has been implemented. The special educator has an indirect influence on the identified pupils, and effects of the intervention must be calculated in terms of pupil progress through the mediation of the regular classroom teacher. (Christian and McKenzie, 1972; Dimmick, 1982; Hasazi, 1976; Hansen and Hansen, 1978; Mainer, 1982).

The Adaptive Learning Environment Model (ALEM) as described by Wang (1981) is a comprehensive individualized educational program that provides effective education services for regular and mildly handicapped students in a common setting. Some important elements of this educational program include: 1) a system for diagnosing and monitoring student progress; 2) teaching self-management skills; 3) team teaching between regular and special educators. The basic program includes a classroom organization plan that allows regular educators to structure basic environment and curriculum and the special educator to make the needed adaptations of methods and materials.

In the Cooperative Goal Structuring Model, regular and special educators carefully structure hetereogeneous small groups to complete academic tasks as well as learn social skills. The roles of regular classroom teachers and specialists become those of complementary team members who interweave their professional skills for the benefit of all children. In this model, pupils make progress in both academic and social skill achievement. (Carlson, 1985; Johnson and Johnson, 1985).

The Communication Model Preschool Program from the University of Washington's Experimental Unit emphasizes an in-class team approach for serving

children with communication delays in the classroom setting. By blending complementary early childhood and specialized communication goals, the team ensures that identified children learn throughout the day rather than only in individual therapy sessions removed from the classroom. Children in this model as compared with a similar population in a control group receiving "removal" services exclusively, have made significant progress in communication skill development. (Rieke, Lynch, and Soltman, 1977)

Frassinelli, Superior, and Meyers (1983) examined a model in which the communication specialist consulted with classroom teachers as an effective method of serving young children with communication delays. However, the authors acknowledged that scant information about collaborative skills is available.

Given, then, that collaborative models are being used and are effective, the issue becomes one of preparation. Two overall questions need to be addressed when considering preparation issues. First, what are the exact skills needed to work in collaborative models? Second, what methods of instruction are most effective in helping pre-service education students learn and use those skills?

RESEARCH STUDY

Identifying and Describing Collaboration Skills for Early Childhood Mainstreamed Settings

For the purposes of this study, five collaborative skills will be identified and described. One of the skills needed in collaboration model is a common knowledge base. Basic concepts of both specialists and regular educators need to be defined in clear and precise terms, free from jargon.

A second skill needed is identifying and using effective interpersonal com-

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munication strategies. These strategies include paraphrasing, using empathic comments, and questioning for clarification.

A third skill is using a problem-solving approach related to individual and classroom instruction issues. The problem solving steps include 1) identifying the issues; 2) analyzing the pros and cons (strengths and weaknesses) surrounding an issue; 3) generating alternative solutions; 4) making a team commitment to try a solution; 5) collecting data about the effectiveness of a solution; 6) evaluating the effects of a solution and changing as needed.

Joint planning is a fourth skill needed in collaboration models. Complementary roles for regular and special educators are needed. In instructional planning, there are processes which define the general educational and developmental goals, specific objectives, activities, and environmental design. With mainstreaming included, there also need to be specialized goals, objectives, and adaptations of activites and environment for pupils with special needs.

A fifth necessary skill is teaching as a team in one setting with complementary roles. This teaching occurs when regular and special educators are equal team members and engage in spontaneous instructional turn-taking based on each member's area of expertise.

Study of Effective Instructional Methods to Teach Collaboration Skills

--Participants

To determine the effectiveness of various methods in learning collaboration skills at the pre-service level of early childhood teacher education, a study was conducted over a one year period. From a population of seventy-two early child care and development majors and minors and thirty five communication

the other an experiential assessment. A written test instrument administered to all subjects measured the effects of different instruction on subjects knowledge about and ability to analyze the five collaboration skill areas. The statistical procedure ANOVA (analysis of variance) from the Statistical Package for the Social Sciences was used to determine the significance of the differences in test scores among the three instructional groups.

The experiential assessment involved one team from each instructional group, randomly chosen, and measured the effects of different instructional methods on the subjects' ability to actually implement the collaboration skills. An in-depth observational assessment using checklists for data gathering and qualitative analyses were used to describe the differences among the three subject groups.

--Written Test

The three part written test included the following: Part A, an objective matching test; Part B, an analysis of a videotaped example using specific questions; Part C, planning on the basis of a case study example.

Part A was a fifty-item matching test related to background knowledge about the extension of communication, facilitating strategies, early childhood curriculum. The test was developed by the instructional team and reviewed by experts in the fields of early childhood education and communication disorders. In scoring this test, each correct item counted one-half point. The top score possible was 25.

Part B was the analysis of a fifteen minute video taped example of a team meeting and actual in-class teaming of a regular educator and specialist. Students were asked to tally the numbers of interpersonal supportive strategies, the initiations and responses of regular and special educators (and, in the in-

class portion, to relate the actions of educators to the extension of interaction with the pupils), and list any aspects of problem solving they observed. On the basis of this data, students were asked to make summary statements about the quality of interpersonal climate, the quality of the problem-solving approach, and the quality of the team teaching. Each subjects' responses were rated by the writers and two unbiased experts. Inter-observer reliability on the original responses was calculated at .88 using Shure's formula (1963). The minor discrepancies were discussed among the raters and one score for each subject was given. The top score possible was 15.

Part C included, after reading a case study of a three-year-old pupil with communication delay, the development of an instructional plan with general educational goals, objectives, and activities as well as specialized objectives and adaptations of strategies and activities. Subjects analyzed the strengths and concerns of the pupil as a basis for planning. Again, the subjects' responses were rated by the writers and two unbiased experts. Inter-observer reliability on the original ratings was calculated at .92. Again, minor discrepancies were resolved and one score assigned to each subject. The top score possible was 15.

--Experiential Assessment of Effects

Teams of two students (one from early childhood education and one from communication disorders) were randomly selected from each of the instructional groups (Group I, lecture-discussion; Group II, instruction with videotapes; Group III, guided experience in demonstration program). These teams engaged in planning and implementing an early childhood activity with three unfamiliar young children, two of which had communication delay, and one of which was normally developing. Planning time for this experience was limited to fifteen

minutes and the implementation time was twenty minutes. Videotapes were made of the three teams and were analyzed by the writer and two experts, one in the field of communication disorders and one in the field of early childhood education.

Criteria for the analysis of the tapes were as follows. Effective interpersonal and problem solving strategies used in both the planning and implementation phases were tallied and described, as were the initiations of both regular educator and communication specialists. The quality of the joint planning in terms of both the general educational developmental goal and the specialized objectives was assessed. The implementation of facilitating strategies to extend pupils' interactions were also tallied and described. On the basis of the quantitative tallies and the descriptions, qualitative assessment statements related to the five collaboration skill areas were made and each team was ranked on a continuum from (1) low to (10) high.

The measurement of each collaboration skill was measured on both the written test and the experiential assessment (See Table 1.)

Table 1. Tools used to measure effects of various instructional methods on the acquisition of collaboration skills

SKILL	MEASURE
1. Developing a common knowledge base	Written Test: Part A Experiental Assessment: Use of Strategies, Extension of Interaction
2. Identifying and using supportive interpersonal communication strategies	Written Test: Part B Experiental Assessment: Tally and Description of Supportive Strategies
3. Using problem solving methods	Written Test: Part B Experiental Assessment: Tally and Description of Problem Solving Methods

Table 1. (continued)

SKILL	MEASURE
4. Engaging in joint planning	Written Test: Part C Experiental Assessment: Tally and Description of Initiations of Regular Educators and Specialists and Evaluation of Quality of Plan
5. Teaching as a team with complementary roles	Written Test: Part B Experiental Assessment: Tally and Description of Initiations of Regular Educators and Specialists

--Results on Written Test

On the written test, there were no significant differences between the early childhood students and the communication disorders students. Thus, variation could not be attributed to the study field expertise of student subjects. (See Tables 2, 3)

Table 2. Analysis of variance of written test results for students from two background study fields

	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
KNOWLEDGE TEST	.182	1	.182	.007	.935
ANALYSIS OF TEAM MEETING AND CLASS-ROOM IMPLEMENTATION	16.342	1	16.342	1.381	.236
PLANNING BASED ON CASE STUDY	171.450	1	171.450	2.888	.097

Table 3. Mean scores on written test for students from two background study fields (n = 42)

	EARLY CHILDHOOD STUDENTS	COMMUNICATION DISORDERS STUDENTS
KNOWLEDGE TEST	17.55	17.18
ANALYSIS OF TEAM MEETING AND CLASSROOM IMPLEMENTATION	8.7	7.18
PLANNING BASED ON CASE STUDY	11.55	8.09

On the written test, there were significant differences among the three instructional methods on the knowledge test ($p < .05$) and the planning from case study ($p < .001$) (See Table 4). The students who learned from systematic experience in a demonstration classroom scored the highest (Group III) on the knowledge test, those who learned from lecture (Group I) scored second highest, and those who learned through instruction using videotapes (Group II) scored the lowest. Apparently specific knowledge is learned well through either implementing the knowledge in practice or through memorizing items defined in lecture.

In the application of knowledge through developing instructional plans based on data presented in a case study, the students in Group III scored the highest, students in Group II scored second highest, and those in Group I scored the lowest. Apparently application can best be learned through either experience or analysis of videotaped examples of real experience.

There were no significant differences in the analysis of team meeting and class implementations. It appears that the recognition of the supportive interpersonal communication strategies, components of problem solving, and balance of initiation between regular and special educators can be learned as well through lecture, instruction with videotapes, or systematic experience in a regular classroom. (See Tables 4 and 5)

Table 4. Analysis of variance of written test results among three instructional methods (n = 42)

CONSTRUCTS OF WRITTEN TEST	SUM OF SQUARES	DF	MEAN SQUARES	F	SIGNIFICANCE OF F
Knowledge Test	171.155	2	85.577	3.647	.035[a]
Analysis of Team Meeting and Class	16.469	2	8.235	1.493	.237
Planning from Case Study	486.344	2	243.172	32.728	.001[b]

[a] $p < .05$
[b] $p < .01$

Table 5. Mean scores on written test for three instructional methods (n = 42)

CONSTRUCTS OF WRITTEN TEST	INSTRUCTIONAL GROUPS I Lecture	II Instruction with Videotapes	III Systematic Experience in Interdisciplinary Practicum
Knowledge Test	16.88	15.25	20.50
Analysis of Team Meeting and Class	7.13	8.25	8.60
Planning from Case Study	5.44	11.94	13.10

--Results on Experiential Assessment

In assessing the implementation of the common background knowledge, students in Group III used the greatest number (fifteen) of different facilitating strategies and had the greatest number (ten) of extensions of pupils' interactions and those in Group I had the fewest number (one) of strategies and no extensions of pupils' interactions. Although the Group I scored second highest in the written test, the student team from Group I had great difficulty actually implementing the strategies. These students used one strategy--convergent questioning and had no extensions of pupils' interactions. Students in Group II used six different strategies and had five extensions of pupils' interactions.

In assessing the quality of the interpersonal environment, students in Group III had sixteen examples of the use of paraphrases, empathic responses, and questions for clarification. Students in Group I had one such strategy, and students in Group II had seven. In the written test, there were no significant differences among instructional groups in recognizing these strategies. Again, it appears to be easier to recognize than to implement interpersonal strategies.

The third collaborative skill area, using problem solving, also had dif-

ferences among groups. Groups II and III defined the issues, analyzed background information about the pupils they would teach, and generated and evaluated various ideas. Group I did not use problem solving. This area is much like the interpersonal area above, with no significant differences in recognition of problem solving components among instructional groups on the written test but qualitative differences in practice.

Joint planning is the fourth collaboration skill area. In this, Group III had a balance of initiation by regular educator and communication specialist. The team developed a plan that had a philosophically sound educational/ development goal which they further refined into an objective and appropriate activity. Specific objectives and adaptations of methods and materials were also included. There was an exchange of ideas. In Group II, there was a slight dominance of one student, but a high quality plan was developed. In Group I, there was no joint planning due to the dominance of one student. No general goals or specific objectives were generated, and activities appeared without purpose tied to the individual needs of the children. These results correspond with those on the written test, where there were significant differences among the three instructional groups in developing the written plan.

In team teaching, Groups II and III had a balance of intitiation in classroom interactions. They used complementary roles with the regular educator structuring the environment and introducing the activity, and the specialist working toward specific communication objectives. Group III showed more spontaneous turn-taking. The team from Group I showed the dominance of one member in the classroom implementation, a continuation of that found in the planning session. In comparing these results with the written test, it is much like interpersonal and problem solving areas above, with recognition of team

teaching in written analysis showing no significant differences among groups, but the actual implementation showing qualitative differences among groups.

In overall rating on a ten point scale, the average scores of the three expert ratings were as follows: Group I, 2; Group II, 7; Group III, 9.5.

DISCUSSION

The basic assumption underlying this study is that collaboration skills are important in enhancing the development of young children. Certainly teaching skills such as relating well with students, motivating students, and preparing well organized and developmentally appropriate learning experiences for normally developing young children are significant. But, with the number of pupils with special needs found in early childhood settings, there is also a need to integrate the expertise of specialists into the ongoing interactions pupils have throughout their day. Thus, a process for developing collaboration skills as enumerated here, is crucial.

Developing a common knowledge is important if a team is to function effectively. In this study, this knowledge base included definitions of a communication model, facilitating strategies, early childhood environment and curriculum development principles. For this collaboration skill, there were significant differences on the written test among the three instructional groups, with Group III (those who learned through systematic experience in an interdisciplinary practicum) scoring the highest. This group also was most effective in translating this background knowledge into action through using a variety of facilitating strategies to extend pupils' interactions.

Using supportive interpersonal strategies is another important collaboration skill. Such things as paraphrasing, commenting empathically, and

questioning for clarification help team members to effectively support each other both emotionally and intellectually. There were no significant differences among the groups in the recognition of such strategies, but there were qualitative differences in actually using them in the planning and implementation of the learning activity with pupils. The teams from Groups II (instruction with videotapes) and III (systematic experience in interdisciplinary practicum) used many more supportive comments than did the team from Group I (lecture).

A third collaboration skill is using problem solving. As team members define issues, explore contexts, develop alternative strategies, decide on a plan for action, implement and evaluate the plan, they maintain openness and use evidence to support decision making. Although there were no significant differences on the written test in the recognition of these components, there was a greater use of problem solving among Groups II and III than in Group I in the experiential assessment.

Joint planning with general educational goals, objectives, and activites and complementary specific objectives and adaptations is critical if pupils with special needs are to be served in mainstreamed settings. There were significant differences among instructional groups in the written test related to planning based on data in a case study, with Group III scoring the highest and Group I the lowest. In the experiential assessment, Groups II and III developed higher quality plans with a balance of participation by regular educator and specialist than did Group I.

The fifth important skill is team teaching with complementary roles in a single site. When team members feel comfortable with each other, each member's area of expertise can be used in a spontaneous matter in the early childhood site. Like the areas above, there were no significant differences in the

recognition and description of regular education and specialist initiations among the instructional groups on the written test. In actually teaming in the classroom, Groups II and III engaged in turn-taking frequently, where one person dominated in Group I.

Overall, it appears that lecture is least effective when actual implementation of collaboration skills is needed. It is somewhat effective in building basic background knowledge. Instruction with videotape seemed least effective in building a background knowledge base, but was helpful in developing the ability to plan jointly. The most effective overall instructional method in both the written test and the experiential assessment was systematic experience in a interdisciplinary practicum. Instruction with videotapes was, however, nearly as effective in the experiential assessments of collaboration skills.

The question then relates back to the overall objectives of preparation of early childhood educators for mainstreaming. This study, although small, gives indications that systematic, guided interdisciplinary practicum experience is helpful in building both background content and translating that into action. If resources do not allow the intense supervision that this type of practicum requires, then the use of videotape examples are a second alternative to provide this translation. The traditional lecture format, still prevalent in many teacher preparation programs needs, at the very least, to have visual and case study supplements.

There are additional questions which need to be addressed: Would the same differences have occurred if the comparison drawn were between guided and unguided practicum experiences? Would there be greater differences if the period of instruction were sixty hours rather than twenty hours? Would the same results be found if this process were replicated with larger numbers of stu-

dents? How can materials designed for developing collaboration skills be more widely distributed and used?

Initial support for early childhood teacher preparation which includes carefully guided interdisciplinary practicum experiences has emerged from this study. That clearly defined collaboration skills can be mastered more effectively with practice and systematic feedback rather than through either lecture or instruction with videotaped examples is evident in this study. The need for this type of interdisciplinary practicum is vital if future teachers are to learn the skills necessary to collaborate with specialists in enhancing the development of young children with special needs in mainstreamed settings.

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